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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,148

04/09/2007

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ALEXANDRIA, VA 22320-4850

EXAMINER

MOMPER, ANNA M

ART UNIT

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3657

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,148	Applicant(s) HAGFORS ET AL.	
	Examiner ANNA MOMPER	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/06/2006, 1/11/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

The specification discloses a longitudinal and transverse direction. It is unclear as how the applicant is applying these directions with respect to the dimensions of the belt. For clarity of the disclosure a revision is suggested such as a statement "the longitudinal direction being taken in the running direction of the belt and the transverse direction being taken in the width direction of the belt" or the inclusion in Figure 1 of a set of arrows pointing in the length and width direction of the belt specifying which is being considered the longitudinal direction and which is the transverse direction.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The term "high" in claim 5 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Phely (US 2004/0029669 A1).

As per claim 1, Phely discloses a press belt (10) made from an elastomer material and forming a closed loop ([0048] Ln. 5-7), the belt having an inner surface and an outer surface and three layers of reinforcement yarns (30, 50, 52) arranged inside the elastomer material, an innermost yarn layer (50) closest to the inner surface being formed by longitudinal and transversely adjacent reinforcement yarns of the press belt, and a middle yarn layer (30) being formed by transverse longitudinally adjacent reinforcement yarns of the press belt, wherein an outermost yarn layer (52) closest to the outer surface of the press belt is formed by longitudinal and transversely adjacent reinforcement yarns of the press belt, which absorb energy and are restored from deformation with delay in connection with deformation (the yarn layers will absorb an amount of energy before experiencing any elastic or plastic deformation resulting in a delay of deformation from energy absorption).

3. Claims 1-2, 4, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawashima et al. (US 5,624,338).

As per claim 1, Kawashima et al. discloses a press belt (44) made from an elastomer material and forming a closed loop (Col. 5, Ln. 7-14), the belt having an inner surface (48) and an outer surface (50) and three layers (62, 66, 68) of reinforcement yarns arranged inside the elastomer material, an innermost yarn layer (68) closest to the inner surface being formed by longitudinal and transversely adjacent reinforcement yarns of the press belt, and a middle yarn layer (62) being formed by transverse longitudinally adjacent reinforcement yarns of the press belt, wherein an outermost yarn layer (66) closest to the outer surface of the press belt is formed by longitudinal and transversely adjacent reinforcement yarns of the press belt, which absorb energy and are restored from deformation with delay in connection with deformation (Fig. 3).

As per claim 2, Kawashima et al. further discloses the material and/or structure of the reinforcement yarns of the outermost yarn layer (66) are more flexible than the reinforcement yarns of the middle yarn layer (62, Col. 5, Ln. 5-6, Ln. 59-62) .

As per claim 7, Kawashima et al. further discloses the outer yarn layer (66) is composed of a plurality of mutually parallel separate reinforcement yarns (Col. 5, Ln. 38-45).

As per claim 9, Kawashima et al. further discloses at least a part of the inner yarn layers (68) is composed of a plurality of mutually parallel separate reinforcement yarns in the same layer (Col. 5, Ln. 35-42).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al. (US 5,624,338).

As per claim 3, Kawashima et al. fails to explicitly disclose the material and/or structure of the reinforcement yarns of the outermost yarn layer are more flexible than the reinforcement yarns of the inner yarn layers in such a manner that in connection with deformation of the press belt they absorb more energy and are restored from the deformation more slowly than the yarns of the other yarn layers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Kawashima et al. to include reinforcement yarns of the outermost yarn layer are more flexible than the reinforcement yarns of the inner yarn layers, since it has been held that where the general conditions of a claim are

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disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further when the belt is in bending, strain increases with distance from the neutral axis, such that if the outermost reinforcement layer is a greater distance from the neutral axis than the innermost reinforcement layer, it would be desired for the outermost reinforcement layer to have greater flexibility to account for the greater strain so that undue stretching of the belt by surpassing the limit of elasticity is avoided.

As per claim 4, Kawashima et al. fails to explicitly disclose the material and/or structure of the reinforcement yarns of the innermost yarn layer are more flexible than the reinforcement yarns of the outermost yarn layers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Kawashima et al. to include reinforcement yarns of the innermost yarn layer are more flexible than the reinforcement yarns of the outermost yarn layers, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further when the belt is in bending, strain increases with distance from the neutral axis, such that if the innermost reinforcement layer is a greater distance from the neutral axis than the outermost reinforcement layer, it would be desired for the innermost reinforcement layer to have greater flexibility to account for the greater strain so that undue stretching of the belt by surpassing the limit of elasticity is avoided.

As per claim 6, Kawashima et al. fails to explicitly disclose the reinforcement yarns of some inner yarn layer being multi filament yarns, the reinforcement yarns of the outermost yarn layer are twisted at a higher twist level than the former.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Kawashima et al. to include the reinforcement yarns of some inner yarn layer being multi filament yarns, the reinforcement yarns of the outermost yarn layer are twisted at a higher twist level than the former, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further, a higher twist level will result in a stiffer and less flexible reinforcement layer and when the belt is in bending, strain increases with distance from the neutral axis, such that if the innermost reinforcement layer is a greater distance from the neutral axis than the outermost reinforcement layer, it would be desired for the innermost reinforcement layer to have greater flexibility to account for the greater strain so that undue stretching of the belt by surpassing the limit of elasticity is avoided, therefore it would be desired that the innermost reinforcement layer have a smaller twist level than the outermost reinforcement layer.

7. Claims 5, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al. (US 5,624,338) in view of Takano et al. (US 4,555,241).

As per claim 5, 8 and 10, Kawashima et al. fails to disclose reinforcement yarns of the outermost yarn layer are multifilament yarns twisted at a high twist level (claim 5),

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and the outermost (claim 8) and inner most (claim 10) yarn layers being composed of one or more spiral-like adjacent reinforcement yarns twisted in the transverse direction of the press belt.

Takano et al. discloses a reinforced drive belt structure (110) in which reinforcement yarn layers (116,117) are located above and below tensile cords (14), wherein the reinforcement yarn layers (116, 117) comprise bundles of smaller diameter filaments twisted to a twisting coefficient of approximately 0.3-2.5 (Col. 4, Ln. 5-86).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the press belt of Kawashima et al. to include reinforcement yarns of the outermost yarn layer are multifilament yarns twisted at a high twist level, and the outermost and inner most yarn layers being composed of one or more spiral-like adjacent reinforcement yarns twisted in the transverse direction of the press belt, as taught by Takano et al., for the purpose of increasing the strength of the reinforcement yarns.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA MOMPER whose telephone number is (571)270-5788. The examiner can normally be reached on M-F 6:00-3:30 (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/
Primary Examiner, Art Unit 3657

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